



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,903	09/29/2003	Peter Bier	PO7878/LeA 35,782	1980

157 7590 05/05/2005

BAYER MATERIAL SCIENCE LLC
100 BAYER ROAD
PITTSBURGH, PA 15205

EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,903

Applicant(s)

BIER ET AL.

Examiner

Marc S. Zimmer

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-112 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 10-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Analysis

In the last correspondence, the Examiner had stated that claim 13 was allowable if rewritten to incorporate all of the limitations of base claim 1. The Examiner had reasoned that claim 13 was allowable over the art insofar as the references cited therein taught away from the level of dilution stipulated by the claim. However, it is now appreciated that (i) and (ii) were only alternatives as indicated by the phrase "at least one of" preceding these steps. Both Lampin and Wright disclose adding one or more of the adjuvants mentioned in (i). According, claim 13 should also have been rejected over these documents.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 10-12, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jin et al., U.S. patent # 6,607,590. Jin discloses protective coatings for a number of substrates including those set forth in column 1, lines 10-21. They are prepared from coatings solutions (paragraph bridging columns 5 and 6) comprising 40-75 weight percent of tetraalkylorthosilicate, 20-45 weight percent of an epoxy-functional

Art Unit: 1712

silane (column 8, lines 53-67 through column 9, lines 1-29) and 5-15 weight percent of a methacryl-functional silane (column 9, lines 30-39). The recommended total solids content of the solution is between 15 and 50% by weight (column 10, lines 16-17) with the balance of the composition being solvent (column 9, lines 48-52) of which 20-50% by weight is water. Hydrochloric acid is employed as a hydrolysis catalyst that keeps the system at a pH of between 3 and 6. General conditions for hydrolysis are outlined in column 6, lines 21-28. As for step (c) of present claim 1, Jin contemplates adding a dye to the curable composition in claim 15, lines 52-56.

In example 1, a coating is described wherein the solids are derived from the hydrolysis/polycondensation of 0.5 moles of tetraethyl orthosilicate, 0.191 moles of glycidoxypropyltrimethoxysilane, and 0.02 moles of methacryloxypropyltrimethoxysilane. Hydrolysis is carried out in a solution that includes approximately 2.4 moles of water, or approximately 1 mol of water for every mol of hydrolyzable group in the composition, in the presence of 2M HCl.

Claims 1-3, 6-7, 10-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashiwagi et al., U.S. patent # 4,865,649. In the abstract, Kashiwagi discloses forming a coating solution comprising a cohydrolyzate of an alkoxysilane mixture containing at least two of di-, tri-, and tetraalkoxysilane wherein the reactants are combined in specified molar ratios. According to column 4, lines 57-66, cohydrolysis is performed by adding water in an amount that provides 2 to 5 moles of water per every mole of alkoxy group in the silane mixture. Co-solvents for the hydrolysis include those outlined in column 4, lines 21-35, many of which have a boiling

Art Unit: 1712

point of below 120° C. Dilution is generally disclosed in column 5, lines 5-11 and dilution to 10% solids is described in Example 6.

As for claim 3, it is suggested in claim 3 that a 0.5-5 mol of trialkoxysilane may be cohydrolyzed with 1 to 3 moles of tetraalkoxysilane. Example 2 teaches cohydrolyzing 1 mol of trialkoxysilane with 2 mmoles of tetraalkoxysilane.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-2, 4, 6-7, 10-12, and 14-15 are rejected under 35 U.S.C. 103(a) as unpatentable over Lampin et al., U.S. patent # 4,485,130. Lampin discloses the preparation of protective coating compositions. Descriptions of the synthetic approach taken for preparing the specific compositions that embody their invention are outlined in the examples. See, for instance, example 1. Therein, it is contemplated that 3.58 moles of methyltrimethoxysilane contributing $3.58(3) = 10.75$ moles of hydrolyzable groups and 0.68 moles of TEOS contributing 2.73 moles of hydrolyzable groups are hydrolyzed in a solution that includes n-butanol, 50 g of glacial acetic acid, and 13.77 moles of water, or approximately 1.02 moles of water for every mol of hydrolyzable group in the formulation. The system would inherently possess a pH in the range stipulated by claim 4 by virtue of Lampin's utilization of acetic acid as a hydrolysis catalyst.

Notably, Lampin states that their objective is to formulate a coating composition capable of conferring upon a substrate abrasion resistance, hardness, and crack resistance (column 1, lines 43-54 and, in doing so, suitable additives may be incorporated into the organosilane-based formulation (column 3, lines 22-27). Also, Lampin contemplates protecting precisely the same type of substrates, i.e. thermoplastic optical lenses, as does Applicant (compare Example 1 of the reference and page 12, lines 20-23 of Applicant's Specification). The materials outlined in present claim 1 are ubiquitous in the lens coating art hence this aspect of the claim is obvious as is their incorporation only after hydrolysis is completed. Indeed, it is typical that conventional additives are blended into the composition after the host matrix is in ready-to-use form partly because they may interfere with polymerization or, in the present case, hydrolysis. Further, "it is prima facie obvious to add a known ingredient to a known composition for its known function." *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

It is noted that, whereas the Examples recite the utilization of methyltrimethoxysilane, Applicant claims methyltriethoxysilane in claim 12. Elsewhere in the reference, methyltriethoxysilane is identified as an alternative to methyltrimethoxysilane and the skilled artisan will appreciate that they are functional equivalents.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jin et al., U.S. patent # 6,607,590. Like Applicant and Lampin, Jin teaches a composition that

Art Unit: 1712

is used primarily as a protective coating for optical lenses. As before, the utilization of leveling agents in these types of formulations is commonplace and the skilled artisan will routinely adjust the amount of this material added to determine that needed to impart the desired effect. "It is prima facie obvious to add a known ingredient to a known composition for its known function." *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244. "Discovering an optimum value of a result effective variable involves only routine skill in the art." *In re Boesch*, 617 F.2d 272, 205 USPQ 215

Allowable Subject Matter

Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 27 is allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1712

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 2, 2005

Marc Zimmer

*Marc Zimmer
AU 1712*